United States Department of Agriculture — Natural Resources Conservation Service

Northeast Area News

MLRA Soil Survey Region 12 Fall 2004

In this Issue

Northeast Area News is published by the Major Land Resource Area 12 office (MO-12) in Amherst, MA.

Ideas, suggestions, and comments are welcome.

Please send items to: Kristina.wiley@ma.usda.gov.

Evaluating Soil Loss from Ball and Burlap Nursery… A Connecticut Approach

By Shawn McVey, Assistant State Soil Scientist, Connecticut

Shawn McVey and Donald Parizek conducted an onsite investigation at the Falkowski Farm, Suffield, CT, which is a ball and burlap tree and shrub production business. The Falkowski Farm is one of the first farms in Connecticut to enter the State's Farmland Preservation Program, a program that purchases the development rights to productive farms for the purpose of keeping the farm available for agriculture forever. The purpose of the onsite was to identify possible best management practices and also determine the long-term sustainability of the ball and burlap operation on the farm using current management and harvesting techniques.

In order to determine the long-term sustainability of the nursery, base line data was collected to be used in evaluating the existing soil resources and assessing the vulnerability to soil loss. Because prime farmland criteria are well defined by USDA and quantifiable, we examined how long the existing prime farmland soils could be mined before they no longer qualified as prime farmland. Based on our prime farmland criteria and soil types, the limiting soil properties on the Falkowski Farm were available water holding capacity (awc) and wetness.

A total of 92 observations were made on the farm to verify the accuracy of the soil survey and to determine average topsoil and solum thickness. These sample sites were marked with our hand held Garmin equipment, then grouped by soil mapping unit in ArcView for ease of interpretation. In order to calculate the volume of soil removed with each harvest, holes left from tree removal were measured. Those calculations indicated that hole sizes ranged between 183.6 and 270 cubic meter per acre. Based on a 1,200 tree per acre stocking rate and assuming 10 percent loss due to loss of marketability (damage or otherwise), we assumed 1,080 holes per acre. An average soil loss (tons/acre/year) was calculated using average soil bulk density values for these soils obtained from the CT statewide soil database.

For example, say a soil has a bulk density of 1,500 kg/m^3 (1.50 g/cc in NASIS) and an average volume of soil removed from 1 acre worth of trees (1080 trees) is 225 m^3. Assuming a seven year harvest cycle, **the calculation for Tons per Acre per Year is:**

(1,500 kg/m^3 * 225 m^3) / (7 years) = 41,785.71 Kg/Yr
(41,785.71 Kg/Yr * 0.001102 Tons/Kg) = **53.1 T/Ac/Yr**

To convert the T/Ac/Yr value into a soil loss rate of inches per year:

(53.1 T/Ac/Yr) * (907.18 Kg/1 Ton) * (1 m^3/1500Kg) * (1 $foot^3$ / 0.0283 m^3) * (1Ac/43,560 $foot^2$) * (12 inches/1 foot) = **0.31 inches/year**

Continued on page 2

Hispanic Heritage Month

Hispanic Heritage Month begins on September 15, the anniversary of independence for five Latin American countries—Costa Rica, El Salvador, Guatemala, Honduras, and Nicaragua. In addition, Mexico declared its independence on September 16 and Chile on September 18.

The number of farms for which Hispanics are the primary operators has grown in every state. Listed below is the data for the states in MO-12.

State	Farms run by Hispanics in 2002	Pct. change from 1997
Conn.	72	+100%
Maine	143	+198%
Mass.	143	+204%
N.H.	59	+211%
N.J.	162	+32%
N.Y.	413	+56%
Ohio	804	+123%
Pa.	349	+27%
R.I.	28	+250%
Vt.	153	+178%

Source: Agriculture Department. The full report is available at www.nass.usda.gov.

Evaluating Soil Loss continued

Figure 1. — More prime farmland soil is ready for sale. It's easy to see what happens to our prime farmland soil in fields used for ball and burlap nursery stock. It leaves the field with the plant! The CT Department of Agriculture is considering changing the legal definition of agriculture to specify agriculture includes the harvesting of plant materials and not soil materials.

Sustainability of the prime farmland soils to the ball and burlap operation varied depending on the type of soil and the harvesting frequency with shorter harvest cycles depleting the soil resource faster than longer harvest cycles. Overall, soil loss rates averaged 0.44 in/yr for 5-year harvest cycle; 0.32 in/yr for 7-year harvest cycle; 0.22 in/yr for 10-year harvest cycle; and 0.15 in/yr for 15-year harvest cycle. These soil losses are not due to wind or water erosion.

A soil loss rate of 0.32 in/yr translates into a 2.24 inch soil loss for the 7-year harvest period. Our calculations indicate none of the current prime farmland soils on the farm would qualify as prime farmland after just 7 harvests (49 years). This may seem like a long time to farm the soil; however, it is not even a life time. Easements such as the one on the Falkowski Farm are written to last in perpetuity.

There are no existing best management practices that address soil loss due to ball and burlap nursery. Soil losses due to wind/water erosion are miniscule compared to the soil loss resulting from removal of the soil with the root stock. Alternatives to the present ball and burlap operation might include filling the holes with soil material of equal or greater quality material (soil compost mix) after each harvest, switching to bare root operation, or to pot-in-pot culture. Our recommendations concerning the soil replacement mix also included the soil mix should not come from sources that degrade other farmland areas. A soil replacement material standard is needed to help solve this resource problem.

Figure 2.— Rows of Arborvitae growing until it's time for sale. Fields that once grew tobacco, vegetables, and corn silage are converting to nursery crops due to the demand for landscaping plants. Nursery and greenhouse is now the top agriculture commodity in Connecticut.

We hope our approach to evaluating soil loss and sustainability of ball and burlap provides others with a starting point when they are faced with such an on-site. The idea of using prime farmland criteria to evaluate agriculture sustainability seems different, but sound. None of the nursery literature we found quantified sustainability by way of prime farmland criteria. We would be interested in your thoughts.

See Figure 3 on page 6.

Native American Heritage Month

Many American places have been named after Indian words. In fact, about half of the states got their names from Indian words. Here are some examples from states in MO-12:

Connecticut: from an Indian word (Quinnehtukqut) meaning "beside the long tidal river."

Massachusetts: from Massachusett tribe of Native Americans, meaning "at or about the great hill."

Narragansett (Rhode Island): named after the Indian tribe.

Ohio: from an Iroquoian word meaning "great river."

Saratoga (New York): believed to be Mohawk for "springs (of water) from the hillside."

Manhattan (New York): Algonquian, believed to mean "isolated thing in water."

Sunapee (lake in New Hampshire): Pennacook for "rocky pond."

Source: O Brave New Words! Native American Loanwords in Current English http://www.infoplease.com/spot/aihm1.html

MO Message

By Bruce W. Thompson, MO-12 Team Leader

Since fiscal year (FY) 2004 is over, it is time to consider schedules for FY 2005. Steve Fischer has sent a request to active soil survey personnel he normally works with requesting proposed review dates for next fiscal year. All 10 states need to get these requests into the MO-12 office. Once the correlators have decided on a schedule, which is always subject to adjustments, I will transfer the schedules to the MO-12 business plan.

SSURGO products, both compilation reviews and digitizing checks, have been moving through the office at a rapid rate. Darlene has several to look at and I have six amendments completed and prepared for typing. I am working with a new secretary so the process will be slow for a while. Since I have cleared my desk of amendments to work on, *(if you do not count the two Massachusetts soil surveys that are in their last review stages for joins)*, any SSURGO products that states hope to complete this fiscal year can still be worked upon.

We worked with Ken Lubich, Program Manager, to see if other MO offices with Editor/Writers could help us with our English edit backlog. Steve Carpenter, West Virginia and Hayes Dye, Arizona each were able to take a manuscript. Both products should be completed about the first of October.

I was unable to attend the summer MO Leaders' meeting, but it was announced at the meeting that we would not be signing a contract with the Government Printing Office (GPO) to produce hard copy soil surveys after October 1, 2004. According to NCGC, there are several manuscripts ready to be printed and during the first quarter some may still be printed before GPO is totally out of the printing business for hard copy soil surveys. Therefore, if you have material at NCGC, it would be wise to check on the status with Mike Kortum at (817) 509-3435.

On a personal note, my family and I would like to thank the numerous soil scientists, agency personnel and friends who sent cards upon my wife's death. It was greatly appreciated. ■

Update from the NORTHEASTERN FOREST SOILS CONFERENCE (NEFSC)

By Larry Safford, Historian, NEFSC

- **THIS YEAR**. For the first time since 1948, the NEFSC **did not meet** this summer. We had planned to meet in Connecticut but plans fell through there. We hope that folks in Connecticut will be ready to try again in the near future.

- **NEXT YEAR.** The West Virginia Association of Professional Soil Scientists has invited NEFSC to join them at their Annual meeting in 2005, probably during July. Mary Beth Adams and Stephanie Connelly will co-chair the meeting. Watch for an announcement in late winter/early spring of 2005.

continued on page 4

National Disability Employment Awareness Month

Congress designated each October as National Disability Employment Awareness Month.

This effort to educate the American public about issues related to disability and employment actually began in 1945, when Congress enacted a law declaring the first week in October each year "National Employ the Physically Handicapped Week." In 1962, the word "physically" was removed to acknowledge the employment needs and contributions of individuals with all types of disabilities. In 1988, Congress expanded the week to a month and changed the name to "National Disability Employment Awareness Month."

Various programs carried out throughout the month also highlight the specific employment barriers that still need to be addressed and removed. For more information visit http://www.dol.gov/odep/faqs/ndeam.htm.

NEFSC Update continued

- **LAST YEAR.** July 24-27, 2003 members of NEFSC joined delegates from the 10th North American Forest Soils Conference in Ontario for a post conference field tour that ranged from the shores of Lake Huron to the shores of James Bay. Mary Beth Adams and Vic Timmer chaired the 10th North American Forest Soils Conference. Neil Foster organized the post conference tour. For more detailed report of the conference and tour including a list of participants and pictures visit http://www.ulern.on.ca/Nafsc/summary.html

- **FUTURE OF NEFSC.** If NEFSC is to continue its long term role of advocacy and education in forest soils in the Northeast, we need to have enthusiastic, up to date tours where discussion and information sharing can occur. Perhaps it is time to evaluate our position and make some changes in format or approach in order to revive interest in soils and forestry related issues. Maybe there should be a spot on the agenda to discuss these issues at the WV meeting.

- **2006 MEETING.** It has been ten years or longer since Rhode Island, Connecticut, Pennsylvania, Maryland, Vermont, Maine, Nova Scotia hosted the meeting. (For a complete chronology visit http://www.ma.nrcs.usda.gov/neasoils/mo12nefschome.html) Anyone from any of these states or ANY state/province still interested in keeping NEFSC an active part of forest soils by hosting NEFSC in 2006, please send a delegate to West Virginia, or contact me at the following address: Larry Stafford, Historian, NEFSC, 113 Roller Coaster Road Strafford, NH 03884, (603) 664-9071 lsaffordnh@earthlink.net. ■

I Remember... Another Vermont Story

By Steve Gourley, State Soil Scientist, Vermont

I remember mapping Fragipan soils in NH and VT. Did the disappearing Fragipans inspire Peter, Paul and Mary to sing "Where have all the Fragipans gone?"

I remember when you could find a spodic horizon almost anywhere. "Where have all the spodics gone, anyway?"

I remember mapping superspodics and thixatropic soils. I remember when Humods were creatures in science fiction stories.

I remember mapping frigid soils in Rockingham County, NH that are now mesic soils and mesic soils in Washington County, VT that are now frigid soils. I guess global warming doesn't extent into Vermont.

I remember using an Abney level to record slope.

I remember writing the first draft of a soil survey handbook in long hand, with a pencil. I can't remember the last time I actually used a pencil.

I remember when old gravel or sand pits were a great place for a landfill. What better use of a hole in the ground than fill it up with trash?

Continued on page 5

I Remember continued from page 4

I remember compiling the soils in Sullivan County, NH on a photo mosaic using colored pencils. I can still hear the snap each time the lead in the pencil broke.

I remember when Tunbridge soil, became Vershire soil, became Elliotsville soil, became Lords soil, became Trow soil, and became Vershire soil in Washington County, VT all in the span of 5 years. We should have just called the soil Sybil to begin with.

I remember thinking once, "Wow I can't believe what they are paying me to take walks in the woods." I remember yesterday thinking as I sat at my computer, "They ain't paying enough to endure this."

I remember when a 6-pack of beer, once helped to speed up decisions made at a progress field review. If only we could teach NASIS to drink beer.

I remember falling asleep at my first progress field review, while sitting across from the State Soil Scientist. The other day I fell asleep in the van on my latest field review.

I remember when most people were happy to see us when we knocked on their doors.

I remember going an entire field season without being confronted by an irate landowner.

I remember mapping an area of Millis soil in NH. I also remember mapping Middlesex, Catamount, Jericho, Bartlett, Mad, and Dog soils. Try to find any of these soils now.

I remember when the per diem rate for Manchester, NH was $35 and $16.

I remember mapping the area containing the series type location of the Groveton series as a Stetson soil map unit. It was the beginning of the end for Groveton soils.

I remember describing pedons in freshly dug graves. I wonder what the correlator for the update will do when he or she needs to locate those pedons.

I remember when I had time to read all of the mail that came across my desk.

I remember when I actually understood the time and progress reporting system.

I remember using a type writer with recycled carbon paper from old time and progress reporting forms. I remember when secretaries typed my correspondence.

I remember telling Caroline Alves that GIS wouldn't amount to anything in soil survey. I should have remembered compiling with colored pencils.

I remember mosquitoes, black flies, hornets, Woodsman Fly dope, and military issue fly dope that came in glass bottles and would strip the paint off of pencils.

I remember when no one wore jeans in the office.

I remember being shot at accidentally. At least I think it was.

I remember being told to dress up like a hunter and go map an area where I had been refused entry by the landowner.

Continued on page 6

I Remember continued from page 5

I remember getting chased by too many dogs. I remember a house in Plainfield that had two Dobermans sitting in the yard every time I drove by. I don't think they would have been impressed if they knew I was a fan of Zeus and Apollo on Magnum PI. I still haven't knocked on that door.

I remember being threatened with a lawsuit if I trespassed.

Today all I can remember about the first issue of Soil Taxonomy is that the cover of the book was green.

Evaluating Soil Loss from Ball and Burlap Nursery (photo continued from page 2)

Figure 3. — Rows of ash trees planted in a field of predominantly prime farmland soils. A statewide important farmland soil is in the foreground (note the ponding). Planting trees on the contour and grass between the rows can help control soil erosion by water, but does little to offset soil losses due to harvesting.